LESSON PLAN (WINTER-2021)		
Discipline: ETC	**Semester:5th**	**Name of the Teaching Faculty: Soma Dash**
Subject:ANALOG & DIGITAL COMMUNICATION	**No of Days /per week class allotted: 5**	**Semester From date: 01.10.2021 To date: 08.01.2022** **No of Weeks:15**
Date	**Class Day**	**Theory / Practical Topics**
4.10.21	1st	**Unit-1: Elements of Communication Systems.(10)** 1.1 Communication Process- Concept of Elements of Communication System & its Block diagram
5.10.21	2nd	1.2 Source of information & Communication Channels.
7.10.21	3rd	1.3 Classification of Communication systems (Line & Wireless or Radio)
9.10.21	4th	1.4 Modulation Process, Need of modulation and
11.10.21	5th	classify modulation process
	1st	**PUJA VACATION**
	2nd	
	3rd	
	4th	
	5th	
11.10.21	1st	1.5 Analog and Digital Signals & its conversion.
16.10.21	2nd	Continue
18.10.21	3rd	1.6 Basic concept of Signals &
21.10.21	4th	Signals classification (Analog and Digital)
23.10.21	5th	1.7 Bandwidth limitation
25.10.21	1st	**Unit-2: Amplitude (linear) Modulation System (15)** 2.1 Amplitude modulation & derive the expression for amplitude modulation signal,
26.10.21	2nd	power relation in AM wave & find Modulation Index.
27.10.21	3rd	2.2 Generation of Amplitude Modulation(AM)- Linear level AM modulation only
27.10.21	4th	2.3 Demodulation of AM waves (liner diode detector, square law detector & PLL)
28.10.21	5th	Continue
30.10.21	1st	2.4 Explain SSB signal and
1.11.21	2nd	DSBSC signal
2.11.21	3rd	2.5 Methods of generating & detection SSB-SC signal (Indirect method only)
3.11.21	4th	Continue
3.11.21	5th	2.6 Methods of generation DSB-SC signal (Ring Modulator) and
6.11.21	1st	detection of DSB-SC signal (Synchronous detection)
8.11.21	2nd	2.7 Concept of Balanced modulators
9.11.21	3rd	2.8 Vestigial Side Band Modulation
10.11.21	4th	**Unit-3: Angle Modulation Systems(10)** 3.1 Concept of Angle modulation & its types (PM & FM)
11.11.21	5th	3.2 Basic principle of Frequency Modulation & Frequency Spectrum of FM Signal.
13.11.21	1st	3.3 Expression for Frequency Modulated Signal & Modulation Index and sideband of FM signal
13.11.21	2nd	Continue
15.11.21	3rd	3.4 Explain Phase modulation & difference of FM & PM)- working principle with Block Diagram
16.11.21	4th	3.5 Compare between AM and FM modulation (Advantages & Disadvantages)
17.11.21	5th	3.6 Methods of FM Generation (Indirect (Armstrong) method only) working principle with Block Diagram

18.11.21	1st	3.7 Methods of FM Demodulator or detector (Forster-Seely & Ratio detector)- working principle with Block Diagram
20.11.21	2nd	Continue
22.11.21	3rd	**Unit-4: AM & FM TRANSMITTER & RECEIVER(08)** 4.1 Classification of Radio Receivers
23.11.21	4th	4.2 Define the terms Selectivity, Sensitivity, Fidelity and Noise Figure
24.11.21	5th	4.3 AM transmitter - working principle with Block Diagram
24.11.21	1st	Continue
25.11.21	2nd	Continue
27.11.21	3rd	4.5 Working of super heterodyne radio receiver with Block diagram
29.11.21		4.6 Working of FM Transmitter & Receiver with Block Diagram.
30.11.21	4th	**Unit-5: ANALOG TO DIGITAL CONVERSION & PULSE MODULATION SYSTEM.(17)** 5.1 Concept of Sampling Theorem , Nyquist rate & Aliasing
1.12.21	1st	5.2 Sampling Techniques (Instantaneous, Natural, Flat Top)
2.12.21	2nd	5.3 Analog Pulse Modulation - Generation and detection of PAM, PWM & PPM system with the help of Block diagram & comparison of all above.
4.12.21	3rd	Continue
6.12.21	4th	Continue
7.12.21	5th	5.4 Concept of Quantization of signal & Quantization error.
7.12.21	1st	5.5 Generation & Demodulation of PCM system with Block diagram & its applications.
8.12.21	2nd	Continue
9.12.21	3rd	5.6 Companding in PCM & Vocoder
11.12.21	4th	5.7 Time Division Multiplexing & explain the operation with circuit diagram.
13.12.21	5th	5.8 Generation & demodulation of Delta modulation with Block diagram.
14.12.21	1st	Continue
15.12.21	2nd	5.9 Generation & demodulation of DPCM with Block diagram.
15.12.21	3rd	Continue
16.12.21	4th	5.10 Comparison between PCM, DM , ADM & DPCM
18.12.21	5th	Continue
20.12.21	1st	**Unit-6: DIGITALMODULATION TECHNIQUES(15)** 6.1 Concept of Multiplexing (FDM & TDM)- (Basic concept , Transmitter & Receiver) & Digital modulation formats.
21.12.21	2nd	Continue
21.12.21	3rd	6.2 Advantages of digital communication system over Analog system
22.12.21	4th	6.3 Digital modulation techniques & types.
23.12.21	5th	6.4 Generation and Detection of binary ASK, FSK, PSK, QPSK, QAM, MSK, GMSK.
27.12.21	1st	Continue
28.12.21	2nd	Continue
29.12.21	3rd	6.5 Working of T1-Carrier system.
30.12.21	4th	6.6 Spread Spectrum & its applications
3.1.22	5th	6.7 Working operation of Spread Spectrum Modulation Techniques (DS-SS & FH-SS).
4.1.22	1st	Continue
4.1.22	2nd	6.8 Define bit, Baud, symbol & channel capacity formula.(Shannon Theorems)
5.1.22	3rd	Continue
6.1.22	4th	6.9 Application of Different Modulation Schemes.
8.1.22	5th	6.10 Types of Modem & its Application

Signature of the Faculty